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SUBJECT: USDA-DHIA High-Ranking Cow Evaluations (February 1997)

TO: Requesters of High-Ranking Cow Evaluations
Sire Analysts, Artificial Insemination Organizations
State Extension Dairy Specialists Advising on Dairy Cattle Breeding

FROM: H.D. Norman, Research Leader, AIPL H. Duane Norman

The February 1997 USDA-DHIA high-ranking cow evaluations are enclosed on 48X-reduction microfiche. These evaluations were calculated as described in Fact Sheet H-2, "USDA-DHIA Animal Model Genetic Evaluations," in the *National Cooperative Dairy Herd Improvement Program Handbook*. Further information can be found in Fact Sheet H-4, "Elite Cow Status."

The evaluations of high-ranking cows are now available through the Animal Improvement Programs Laboratory (AIPL) home page **(http://aipl.arsusda.gov).** Beginning with the release of genetic evaluations in August 1997, these evaluations no longer will be provided on microfiche.

The sequence of data has been changed so that elite cows are followed by high-ranking grades for each breed both on microfiche and in electronic files. Previously, high-ranking grades followed all elite cows. As in the past, owner names and addresses associated with herd codes follow the cow data. Owners who have requested the privacy code will not have their name and address reported.

Beginning in February 1997, percentiles for cows are based on net merit dollars (NM$). The NM$ is based on predicted transmitting abilities (PTA's) in the milk, fat, and protein dollars index (MFP$) discounted for feed cost as well as on PTA's for productive life and somatic cell score. Further informa-tion on the calculation of NM$ can be found through AIPL's home page. The economic values assigned to PTA's in the MFP$ index are a prediction of price relationships that will apply when cows from this year's matings are being milked. They are not expected to change until the base change in 2000.

The symbol * following the cow identification number on the microfiche means that there was a change in identification of cow, sire, dam, or birth date (or a combination of changes) after the second test day of first lactation. This information is gathered through the Record Standards variables, and provided in accordance with the Records Disclosure Policy found in the National Dairy Herd Improvement Program Uniform Operating Procedures document. Format 105N includes an **E** for elite cows and an **H** for high-ranking grade cows at position 77.

Determination of elite or high-ranking grade status was based on a two-stage screening procedure. The first-stage screening criteria for eligibility were:

1. Management groups included lactations of at least three other cows when averaged across a cow's lactations.
2. Last calving was on November 1, 1994, or later.
3. Last record was either in progress (code R) or had a termination code of 0 (blank), 1, 2, or 8.

Summary information for eligible (those passing first-stage screening) registered cows are in Table 1.

TABLE 1. Means and standard deviations of NM$ and mean PTA's for milk, fat, protein, productive life (PL), and somatic cell score (SCS) for registered[1] cows passing first-stage screening.

	Number of cows	NM$	PTA milk	PTA fat	PTA protein	PTA PL	PTA SCS
		($)	*(lb)*	*(lb)*	*(lb)*	*(mo)*	
Ayrshire	10,699	+19 ± 40	+184	+5.6	+5.5	+0.4	3.14
Brown Swiss	21,183	+24 ± 51	+206	+8.8	+7.8	+0.3	3.21
Guernsey	15,518	+28 ± 46	+234	+9.2	+8.2	+0.5	3.32
Holstein	781,424	+37 ± 53	+305	+10.9	+10.7	+0.8	3.17
Jersey	117,541	+29 ± 54	+261	+8.7	+9.0	+0.6	3.31
Milking Shorthorn	3,109	+23 ± 59	+220	+6.9	+6.2	+0.5	2.88
Red & White	5,685	-14 ± 50	-169	-5.5	-5.5	+0.0	3.19

[1] Includes cows in identity enrollment for some breeds

For registered eligible cows a percentile table for each breed was constructed based on NM$. Those percentile tables are provided with USDA-DHIA evaluations for active AI bulls. A percentile was assigned for each cow with data distributed in format 105N. Although the data for Red and White cows are combined with those for Holstein cows for genetic evaluations, a separate percentile is used for screening Red and White cows for elite or high-ranking grade status. Second-stage screening criteria are the NM$ corresponding to a specified minimum percentile (Table 2).

TABLE 2. Percentiles and corresponding NM$ for a cow to be designated as elite or a high-ranking grade and numbers by breed.

Breed	Minimum percentile	Minimum NM$	Elite cows	High-ranking grades
		($)	*(No.)*	*(No.)*
Ayrshire	98	103	197	4
Brown Swiss	98	128	404	8
Guernsey	98	122	296	17
Holstein	99	153	7,531	2,263
Jersey	99	138	1,138	24
Milking Shorthorn	97	137	92	11
Red and White	97	81	167	35

Enclosure